

Letter in response to
'Classification of Traumatic
Brain Injury Severity Using
Informed Data Reduction in a
Series of Binary Classifier
Algorithms'

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Dear Editors,

We read with interest the article published by Prichep and colleagues in which they report the development of algorithms to discriminate between three classes of head injured patients, utilising quantitative electroencephalography (QEEG) measurements from electrodes placed at the Fp1, Fp2, F7, F8, AFz, A1 and A2 positions.¹

QEEG and undefined symptom and neurocognitive assessment data were collected from patients attending 13 Emergency Departments in the USA. The QEEG acquisition device used in this study was not described but the study was supported by BrainScope Co. Inc. and all but one of the authors were affiliated with BrainScope Co. Inc. at the time of publication.

Prichep and colleagues also previously reported the development of an index based on quantitative electroencephalography (QEEG) results measured using a prototype handheld EEG acquisition device created by BrainScope Co. Inc.² Concussion Symptom Inventory; Standardised Assessment of

Concussion; components of the New Orleans Criteria for referral of head injured patients for computed tomography (CT) scan; and the results of CT scans were recorded. Data were collected from patients attending 16 Emergency Departments in the USA. EEG data were collected using a limited frontal array montage headset with electrodes at the same positions as reported above.

We write to inform the editors that we conducted a similar study on behalf of, and funded by, BrainScope Co. Inc. (the B-Ahead UK Trial, Research Ethics Committee reference number 11/H1003/6) in three UK sites (London, Cambridge and Salford). Recruitment began on September 20th 2011. At this time we were aware that other similar or identical studies were ongoing in the USA. We recruited 265 patients over a six month period. However recruitment was abruptly halted on the instruction of BrainScope Co. Inc. on March 3rd 2012 following an internal quality assurance exercise which identified a fault with the headset. After a short period we were then informed that the data from this UK study were unusable as a result of this

fault. The B-Ahead UK Trial was then terminated and the relationship between the three UK sites and BrainScope Co. Inc. ended. Given that both papers were published several months after the UK study was terminated, we felt it was important to make you and your readers aware that the methods used in these studies were very similar to the methods used in the study we conducted, and that it is entirely possible that data were collected from patients using headsets with the same technical fault. We note that the authors do not refer to this technical fault even though it arose months before the publication of the papers.

Yours sincerely

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CC Edward Ciccio, Editor-in-Chief,
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References

1. Prichep LS, Jacquin A, Filipenko J, et al. Classification of traumatic brain injury severity using informed data reduction in a series of binary classifier algorithms. *IEEE transactions on neural systems and rehabilitation engineering : a publication of the IEEE Engineering in Medicine and Biology Society*. 2012;20(6):806-822.
2. Prichep LS, Ghosh Dastidar S, Jacquin A, et al. Classification algorithms for the identification of structural injury in TBI using brain electrical activity. *Computers in biology and medicine*. 2014;53:125-133.

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